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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/646,359	08/22/2003	Steve D. Schmeichel	758.1452USU1	8621
7590	08/08/2005		EXAMINER	
Merchant & Gould P.C. P.O. Box 2903 Minneapolis, MN 55402-0903			TRAN, DIEM T	
			ART UNIT	PAPER NUMBER
			3748	
DATE MAILED: 08/08/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/646,359	SCHMEICHEL ET AL.	
	Examiner	Art Unit	
	Diem Tran	3748	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 25 May 2005.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 11-22 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 11-22 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

This office action is in response to the amendment filed on 5/25/05. In this amendment, claims 1-10 have been canceled; claims 11-13, 16, 17 have been amended and 19-22 have been added. Overall, claims 11-22 are pending in this application.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 22 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 22 is considered new matter since the originally filed disclosure does not contain any support for the invention as now claimed.

The amendment filed 5/25/05 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. Applicant is required to cancel the new matter in the reply to this Office Action.

*Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

*Claims 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gieseke et al. (WO 01/47618) in view of Kashiyama et al. (US Patent 5,205,265).*

Regarding claim 11, Gieseke discloses a method of reducing total emissions of a turbo-charged diesel engine (30) having an engine crankcase and an exhaust tailpipe; the total emissions including particulate matter emissions from the engine crankcase added to the particulate matter emissions from the exhaust tailpipe; the method comprising running the engine to produce crankcase blow-by gases and an exhaust stream; filtering the blow-by gases and directing filtered blow-by gases back into the engine crankcase (see Figure 1); however, fails to disclose treating the exhaust stream with a catalyst and the total emissions are reduced by 25% or greater when compared to the same engine that does not filter the blow-by gases and that does not treat the exhaust stream with a catalyst. Kashiyama teaches that it is conventional in the art, to utilize a catalyst (32) located in the exhaust system of the engine to purify the pollutants from the engine (see Figure 1).

It would have been obvious to one having ordinary skill in the art at the time the invention was made, to have utilized the teaching of Kashiyama, in the Gieseke system, since the use thereof would have reduced the pollutant emissions from the engine.

Regarding claims 12, 13, the modified Gieseke method discloses all the claimed limitations as discussed in claim 11 above; however, fails to disclose that said step of running the engine includes using ultra low sulfur diesel fuel wherein total emissions are reduced by 25-50%. Sulfur is an undesired compound in fuel that causes the emission of harmful SO<sub>x</sub> into the atmosphere. Therefore, regulations have been set up to require fuel used in the internal combustion engines to contain as a little sulfur as possible. Thus, it is obvious to one having ordinary skill in the art that Gieseke uses low sulfur diesel fuel or ultra low sulfur diesel in their engine.

Regarding to the claimed limitation of total emissions being reduced by 25-50%, these limitations recited in the claim are given little patentable weight in that, the modified Gieseke device contains the same claimed limitations and the Examiner has no reason to believe it would perform any different than that now claimed.

Regarding claim 14, Gieseke further discloses that the step of filtering the blow-by gases includes directing the blow-by gases through a coalescer filter to coalesce the gases into liquid; and then, from the coalescer filter through a barrier filter to remove at least some particulate material (see page 6, lines 23-31).

*Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gieseke et al. (WO 01/47618) in view of Kashiya et al. (US Patent 5,205,265) as applied to claim 11 above, and further in view of Sera et al. (US patent 5,726,119).*

Regarding claim 15, the modified Gieseke method discloses all the claimed limitations as discussed in claim 11 above, however, fails to disclose that said catalyst comprising a

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honeycomb structure with a catalyst coating. Sera teaches that it is conventional in the art, to utilize a catalytic converter comprising a honeycomb structure with a catalyst coating (see col. 3, lines 15-20, 25-35).

It would have been obvious to one having ordinary skill in the art at the time the invention was made, to have utilized the teaching of Sera, in the modified Gieseke system, since the use thereof would have been routinely practiced by those having ordinary skill in the art.

*Claims 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gieseke et al. (WO 01/47618) in view of Kashiwama et al. (US Patent 5,205,265) and Sera et al. (US patent 5,726,119).*

Regarding claim 16, Gieseke discloses a kit for reducing engine total emissions; the kit comprising a blow-by filter including:

a first end cap and a second end cap; the first end cap including a central gas stream inlet aperture; a second stage filter comprising a tubular construction of pleated media extending between the first end cap and the second end cap; the tubular construction of media defining an open tubular interior; the central gas stream inlet aperture of the first end cap being in flow communication with the open tubular interior; a first stage coalescer filter oriented in extension across the gas stream inlet aperture; the pleated media of the second stage filter, the first end cap, the second end cap, and the first stage coalescer filter being unitary in construction (see page 7, lines 1-3); said first stage coalescer filter including a nonwoven fibrous bundle having a first upstream surface area; said second stage filter including pleated media having a second upstream surface area (see Figures 4, 5, page 2, lines 4-13, page 11, lines 25-32, page 12, lines 1-11);

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however, fails to disclose a first upstream surface area of the filter being no more than 10% of the second upstream surface area and a catalytic converter comprising honeycomb structure with a catalyst coating and a muffler being located in the exhaust pipe. Kashiyama teaches that it is conventional in the art, to utilize a catalytic converter (32) and a muffler (33) in the exhaust pipe to purify the exhaust gas from the engine (see Figure 1). Sera teaches that it is conventional in the art, to utilize a catalytic converter comprising a honeycomb structure with a catalyst coating (see col. 3, lines 15-20, 25-35) to purify the pollutant emissions from the engine.

It would have been obvious to one having ordinary skill in the art at the time the invention was made, to have utilized the teaching of Kashiyama, in the Gieseke system, since the use thereof would have reduced the pollutant emissions from the engine.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a specific optimum range of the first upstream surface area of no more than 10% of the second upstream surface area, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Regarding claim 17, Gieseke discloses a system having a turbo-charged diesel engine (30) having an engine crankcase with blow-by vent structure and exhaust port structure, a method comprising installing a blow-by filter (36) in gas-flow communication with the engine crankcase blow-by vent structure (see Figure 1); however, fails to disclose installing a catalytic converter comprising a honeycomb structure with a catalyst coating and a muffler in gas-flow communication with the engine exhaust port structure. Kashiyama teaches that it is conventional in the art, to utilize a catalytic converter (32) and a muffler (33) being located in the exhaust pipe

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to purify the exhaust gas from the engine (see Figure 1). Sera teaches that it is conventional in the art, to utilize a catalytic converter having a honeycomb structure with a catalyst coating (see col. 3, lines 15-20, 25-35).

It would have been obvious to one having ordinary skill in the art at the time the invention was made, to have utilized the teaching of Kashiya and Sera, in the Gieseke system, since the use thereof would have reduced the pollutant emissions from the engine.

Regarding claim 18, Gieseke discloses all the claimed limitations as discussed in claim 17 above, Gieseke further discloses that said step of installing a blow-by filter includes installing a blow-by filter (36) including a first end cap and a second end cap; the first end cap including a central gas stream inlet aperture; a second stage filter comprising a tubular construction of pleated media extending between the first end cap and the second end cap; the tubular construction of media defining an open tubular interior; the central gas stream inlet aperture of the first end cap being in flow communication with the open tubular interior; a first stage coalescer filter oriented in extension across the gas stream inlet aperture; the pleated media of the second stage filter, the first end cap, the second end cap, and the first stage coalescer filter being unitary in construction (see page 7, lines 1-3); the first stage coalescer filter including a nonwoven fibrous bundle having a first upstream surface area; the second stage filter including pleated media having a second upstream surface area (see page 2, lines 4-13, page 11, lines 25-32, page 12, lines 1-11); however, fails to disclose the first upstream surface area of the first stage coalescer filter being no more than 10% of the second upstream surface area.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a specific optimum range of the first upstream surface area of no



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more than 10% of the second upstream surface area, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

*Claims 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gieseke et al. (WO 01/47618) in view of Kashiya et al. (US Patent 5,205,265).*

Regarding claim 19, Gieseke discloses a kit for reducing engine total emissions; the kit comprising a blow-by filter including:

a first end cap and a second end cap; the first end cap including a central gas stream inlet aperture; a second stage filter comprising a tubular construction of pleated media extending between the first end cap and the second end cap; the tubular construction of media defining an open tubular interior; the central gas stream inlet aperture of the first end cap being in flow communication with the open tubular interior; a first stage coalescer filter oriented in extension across the gas stream inlet aperture; the pleated media of the second stage filter, the first end cap, the second end cap, and the first stage coalescer filter being unitary in construction (see page 7, lines 1-3); said first stage coalescer filter including a nonwoven fibrous bundle having a first upstream surface area; said second stage filter including pleated media having a second upstream surface area (see Figures 4, 5, page 2, lines 4-13, page 11, lines 25-32, page 12, lines 1-11); however, fails to disclose a catalytic converter being located in the exhaust pipe; a first upstream surface area of the filter being no more than 10% of the second upstream surface area and said engine being certified under emissions regulations in place between 1991 and 2003 and rated to produce between 150 and 600 horsepower. Kashiya teaches that it is conventional in the art,

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to utilize a catalytic converter (32) and a muffler (33) in the exhaust pipe to purify the exhaust gas from the engine (see Figure 1).

It would have been obvious to one having ordinary skill in the art at the time the invention was made, to have utilized the teaching of Kashiyaama, in the Gieseke system, since the use thereof would have reduced the pollutant emissions from the engine.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a specific optimum range of the first upstream surface area of no more than 10% of the second upstream surface area, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

With regard to the preamble directed to a engine that were certified at the time of manufacture under emissions regulations in place between 1991 and 2003 and were rated to produce between 150 and 600 horsepower, a preamble to a claim is denied the effect of a limitation where the claim is drawn to a structure and the portion of the claim following the preamble is a self contained description of the structure not depending for completeness upon the introductory clause. See *Kropa v. Robie*, *supra* at 480. See also *Ex parte Mott*, 190 USPQ 311, 313 (PTO Bd. Of App. 1975). Claim 19 clearly does not require the preamble for completeness.

Regarding claim 20, Gieseke discloses a method for reducing emissions from existing on-highway diesel engines comprising:

installing a blow-by filter (36) in gas flow communication with the engine blow-by vent structure, and in further gas-flow communication with the engine air intake structure (see Figure 1); however, fails to disclose a catalytic converter being located in the gas flow communication

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with said exhaust port structure and said engine being certified under emissions regulations in place between 1991 and 2003 and rated to produce between 150 and 600 horsepower.

Kashiyama teaches that it is conventional in the art, to utilize a catalytic converter (32) being located in the exhaust system of the engine to purify pollutant emissions from the engine (see Figure 1).

It would have been obvious to one having ordinary skill in the art at the time the invention was made, to have utilized the teaching of Kashiyama, in the Gieseke system, since the use thereof would have reduced the pollutant emissions from the engine.

With regard to the preamble directed to a engine that were certified at the time of manufacture under emissions regulations in place between 1991 and 2003 and were rated to produce between 150 and 600 horsepower, a preamble to a claim is denied the effect of a limitation where the claim is drawn to a structure and the portion of the claim following the preamble is a self contained description of the structure not depending for completeness upon the introductory clause. See *Kropa v. Robie*, *supra* at 480. See also *Ex parte Mott*, 190 USPQ 311, 313 (PTO Bd. Of App. 1975). Claim 20 clearly does not require the preamble for completeness.

Regarding claim 21, the modified Gieseke method discloses all the claimed limitations as discussed in claim 20 above, Gieseke further discloses that said step of installing a blow-by filter includes installing a blow-by filter (36) including a first end cap and a second end cap; the first end cap including a central gas stream inlet aperture; a second stage filter comprising a tubular construction of pleated media extending between the first end cap and the second end cap; the tubular construction of media defining an open tubular interior; the central gas stream inlet aperture of the first end cap being in flow communication with the open tubular interior; a first

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stage coalescer filter oriented in extension across the gas stream inlet aperture; the pleated media of the second stage filter, the first end cap, the second end cap, and the first stage coalescer filter being unitary in construction (see page 7, lines 1-3); the first stage coalescer filter including a nonwoven fibrous bundle having a first upstream surface area; the second stage filter including pleated media having a second upstream surface area (see page 2, lines 4-13, page 11, lines 25-32, page 12, lines 1-11); however, fails to disclose the first upstream surface area of the first stage coalescer filter being no more than 10% of the second upstream surface area.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a specific optimum range of the first upstream surface area of filter no more than 10% of the second upstream surface area, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

### ***Response to Arguments***

Applicant's arguments filed on 5/25/05 have been fully considered but they are not deemed persuasive.

The Applicant argued that there is no suggestion or motivation to combine the references cited by the Examiner. The Examiner respectfully disagrees, since the Gieseke reference discloses filtering blow-by-gas and directing the filtered blow-by-gases back to the engine and the Kashiya reference discloses using a catalytic converter in the exhaust gas to purify the pollutants emission from the exhaust gas. It is obvious for one having ordinary skill in the art, to combine these above references since it is well known in the art that there is a

catalytic converter being used in the exhaust gas system of the internal combustion engine art to purify the pollutant emissions in the exhaust gas.

Additionally, in response to appellants' argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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*Conclusion*

Any inquiry concerning this communication from the examiner should be directed to Examiner Diem Tran whose telephone number is (571) 272-4866. The examiner can normally be reached on Monday -Friday from 8:30 a.m.- 5:00p.m.

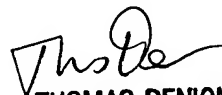
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion, can be reached on (571) 272-4859. The fax number for this group is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 800-786-9199 (toll-free).



Diem Tran  
Patent Examiner  
Art unit 3748

DT  
July 29, 2005



**THOMAS DENION**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 3700**